Controlled Environment Agriculture Center

# Triston N Hooks

Assistant Professor of Practice
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College of Agriculture, Life & Environmental Sciences
COLLEGE OF ENGINEERING
Biosystems Engineering

## Education

- 2020, Ph.D. in Plant and Environmental Science, New Mexico State University, Evaluation and Analysis of a Multi-Parent Advanced Generation Inter-Cross (MAGIC) Introgressed Population of *Gossypium hirsutum* with *G. barbadense* germplasm for salt tolerance, Advisor Dr. Jinfa Zhang.
- 2015, M.S. in Plant and Environmental Science, New Mexico State University, Salt Tolerance and its Implications for Potential Invasiveness of Three Model Plant Species *Lepidium alyssoides*, *L. draba*, and *L. latifolium*, Advisor Dr. Geno Picchioni.
- 2012, B.S. in Biology, New Mexico State University.

## Employment

- 2021 – present, Assistant Professor of Practice, Hydroponic Specialist, Controlled Environment Agriculture Center (CEAC), Biosystems Engineering Department, the University of Arizona, Tucson, AZ
- 2019 – 2021, Postdoctoral Research Associate, Urban Agriculture, Texas A&M AgriLife Research, Dallas, TX
- 2017 – 2019, Research Assistant, Arid Landscape Development, Texas A&M AgriLife Research, El Paso, TX

## Teaching, Advising, and Mentorship

### Teaching:

- Fall 2024 – present, BE 597A Academic and Career Prep, 1 unit
- Fall 2024 – present, BE 496A Career and Professionalism, 1 unit
- Fall 2023 – present, BE 596A/B Graduate Seminar, 1 unit
- Fall 2022 – present, BE 217 Introduction to Hydroponics, 3 units
- Fall 2022 – present, BE 217L Introduction to Hydroponics Lab, 1 unit
- Spring 2022 – present, BE 350 Advanced Hydroponic Crop Production, 3 units
- Spring 2022 – present, BE 350L Advanced Hydroponic Crop Production Lab, 1 unit
- Spring 2022 – present, BE 497C/597C Integrated Pest Management for CEA, 3 units
- Spring 2022 – present, BE 393/493 Internship, 1-3 units
- Spring 2022 – present, BE 399/499 Independent Study, 1-3 units

**Advising:**

- Fall 2025 – present, Major Advisor, BE Master's Makena Verdugo, Bio-circular Substrates and Capsaicinoid Expression in Hydroponic Pepper Production
- Fall 2025 – present, Major Advisor, BAT Master's Stacey Hinzman, From Crown to Canopy: Strawberry Variety Performance Across Hydroponic Substrates
- Fall 2025 – present, Major Advisor, GIDP-CEA Master's Ashley McKinley, Hydroponic Cultivation of Roselle Hibiscus: A Substrate-Based Approach for Local Tea Production
- Fall 2023 – present, Co-chair, BE PhD Mike Zankel, Hydroponic nutrient solution real-time mineral analysis for improved recirculation and management
- Spring 2023 – Winter 2024, Major Advisor, BE Master's Adam Gelman, Characterizing Hydroponic Dwarf Tomato Growth in Microbially Inoculated Lunar Regolith Simulant
- Spring 2023 – Summer 2023, Major Advisor, GIDP-CEA Master's, Chantel Harrison, Indigeponics: Incorporating Indigenous Plants and Perspectives in a Controlled Environment Greenhouse

**Mentoring:**

- 2023 – present, Serve as a CALES Career Champion
- 2022 – present, Advisor of the Controlled Environment Agriculture Student Association (CEASA), CEA Student Association | Controlled Environment Agriculture Center (arizona.edu)

## Service and Outreach

- 2022 – present, Greenhouse Manager at the BE-CEAC Teaching Greenhouse and Student Union Rooftop Greenhouse
- 2022 – present, Instructor of the BE-CEAC Hydroponic Vine Crop Intensive Workshop Greenhouse Hydroponic Intensive Workshop | Controlled Environment Agriculture Center
- 2022 – present, Panelist on the USDA NIFA A1102, SBIR, and 1890 Proposal Review Panels
- 2021 – present, Hydroponic Specialist at BE-CEAC Triston Hooks | Controlled Environment Agriculture Center

**Committees:**

- 2022 – present, BE Representative to Sustainable Plant Systems Curriculum Committee
- 2022 – present, BE Undergraduate Program Committee
- 2022 – present, BE Peer-Review of Annual Accomplishments Committee
- 2022 – present, BE Branding and Marketing Committee

## Awards and Scholarly Presentations

- Fungi Blocks for Fresh Crops, Fall 2025 CSF grant ($88k), Hooks lead, Gomez co-lead. Fungi Blocks for Fresh Crops | Office of Sustainability
- 2025, Presenter at the BE-CEAC Greenhouse Crop Production and Engineering Design Short Course, Tucson AZ, "Hydroponic Nutrient Solutions" and "IPM for CEA" CEA Short Course | Controlled Environment Agriculture Center
- 2022 Urban Agriculture: Controlled Environment, The 4th Annual Conference, Dallas TX, Invited Speaker "Integrated Pest Management (IPM) for CEA"

- 2022 Tenwest Impact Festival, Startup Tucson, Tucson AZ, Invited Speaker “The Future of Farming for Earth and Beyond”
- 2021 National Greenhouse Manufacturer Association (NGMA) Annual Meeting, Tucson AZ, Invited Speaker “Trends in Controlled Environment Agriculture (CEA)”

## Selected Journal Publications

*Citations 249, h-index 10, i10-index 10*

- Adam Gelman, Josiah Jackson, **Triston Hooks**, 2026. Characterization of hydroponic dwarf tomato growth in microbially inoculated lunar regolith simulant. Acta Astronautica 240, 695-712, https://doi.org/10.1016/j.actaastro.2025.12.010
- **Hooks** et al., 2022. Effect of Nutrient Solution Cooling in Summer and Heating in Winter on the Performance of Baby Leafy Vegetables in Deep-Water Hydroponic Systems. *Horticulturae* 8 (8), 749.
- **Hooks** et al., 2022. Adding UVA and Far-Red Light to White LED Affects Growth, Morphology, and Phytochemicals of Indoor-Grown Microgreens. *Sustainability* 14 (14)
- **Hooks** et al., 2022. Short-Term Pre-Harvest Supplemental Lighting with Different Light Emitting Diodes Improves Greenhouse Lettuce Quality. *Horticulturae* 8 (5), 435.
- **Hooks** et al., 2022. Salt tolerance of seven genotypes of zoysiagrass (*Zoysia* spp.). *Technology in Horticulture* 2 (1), 1-7.
- **Hooks** et al., 2022. Effects of organic fertilizer with or without a microbial inoculant on the growth and quality of lettuce in an NFT hydroponic system. *Technology in Horticulture* 2 (1)
- **Hooks** et al., 2021. Effect of Pre-Harvest Supplemental UV-A/Blue and Red/Blue LED Lighting on Lettuce Growth and Nutritional Quality. *Horticulturae* 7:80.
- **Hooks** et al., 2021. Performance and Phytochemical Content of 22 Pomegranate (*Punica granatum*) Varieties. *HortScience*, 56:217-225.
- Picchioni, G., **Hooks**, T., Schutte, B., Shukla, M., and Daniel, D., 2020. Halophyte ion regulation traits support saline adaptation of *Lepidium latifolium*, *L. draba*, and *L. alyssoides*. *Plant Ecol* 221:295–308.
- Niu, G., Y. Sun, T. **Hooks**, J. Altland, H. Dou and C. Perez. 2020. Salt tolerance of hydrangea plants varied among species and cultivar within a species. *Horticulturae*, 6:54.
- **Hooks**, T. and Niu, G., 2019. Relative salt tolerance of four herbaceous perennial ornamentals. *Horticulturae*, 5:36.
- **Hooks**, T., Niu, G. and Ganjegunte, G., 2019. Seedling Emergence and Seedling Growth of Mustard and Rapeseed Genotypes under Salt Stress. *Agrosystems, Geosciences & Environment*, 2:1-8.
- **Hooks**, T., Picchioni, GA, Schutte, BJ, Shukla, MK, Daniel, DL, 2018. Sodium Chloride Effects on Seed Germination, Growth, and Water use of *Lepidium alyssoides*, *L. draba*, and *L. latifolium*: Traits of Resistance and Implications for Invasiveness on Saline Soils. *Rangeland Ecology & Management* 71:433-442.
- **Hooks**, T., Picchioni, GA, Schutte, BJ, Shukla, MK, Daniel, DL, Ashigh, J, 2018. Salinity, an Environmental “Filter” Selecting for Plant Invasiveness? Evidence from the Indigenous *Lepidium alyssoides*. *Rangeland Ecology & Management* 71:106-114.